

REMARKS

The enclosed is responsive to the Examiner's Office Action mailed on March 3, 2009. At the time the Examiner mailed the Office Action, claims 1-21 were pending. By way of the present response, applicant has: 1) amended no claims; and 2) added no claims; and 3) canceled no claims. As such, claims 1-21 are now pending. No new matter has been added. Reconsideration of this application as amended is respectfully requested.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 5, 8, 10, 12, 13, 17, and 20 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Syed, et al., U. S. Publication No. 2002/0108021 (hereinafter "Syed") in view of Rixner, et al., U. S. Patent No. 6,016,531 (hereinafter "Rixner").

Syed describes a multiple way cache in which one section/way is temporarily disabled (the processor cannot read or write to it). The disabled section is used for unloading to or preloading from the main memory, after which it may be re-enabled for normal operation. (Syed, paragraph [0083]).

Rixner describes a system for managing data flow into a cache. In particular, Rixner describes a cache array that is partitioned into three regions: "the operating system (OS) space, which is always pinned or available, Side 1, which holds task B, and Side 2, which holds task A." (Rixner, col. 5, lines 19-22).

Applicant respectfully submits that the combination of Syed and Rixner fails to disclose

reserving a first number of unallocated lines in the cache for pinned data, the first number being less than the number of lines in the cache; and
if data needs to be inserted into the cache as pinned data,
selecting a line from the lines reserved for pinned data;
storing the data in the line; and
inserting the line into a search group of the CATB cache, wherein a constant number of non-pinned lines are maintained within the search group.

(Claim 1) (emphasis added).

In its rejection, the Office Action states that “the applicant did not differentiate the claimed CATB cache from any regular cache. Any well-known cache memory reads on the CATB cache.” (Office Action dated 3/3/09 page 3). Applicant respectfully disagrees and submits that one of ordinary skill in the art would understand the meaning of a Constant Access Time Bounded (“CATB”) cache. Furthermore, it is submitted that Applicant is not required to define a CATB cache within the claim and that the specification, as originally filed, provides a clear description of a CATB cache. (see MPEP 2173.01).

The Office Action further states that, although Syed does not specifically disclose reserving cache lines for pinned data, Rixner allegedly does. Applicant respectfully disagrees. First, as cited by the Office Action, Syed describes that sections are only **temporarily** disabled and that the section of memory is re-enabled once the section has been unloaded or preloaded. This teaches away from the concept of pinned data and therefore teaches away from the claims and any reference to pinned data in Rixner. Additionally, Rixner only describes that a cache array is partitioned to include an OS space, which is always pinned or available, not that a particular number of **cache lines**

for pinned data are reserved. Rixner provides no detail as to the pinned OS space and, therefore, fails to disclose this claim feature.

The combination also fails to disclose inserting the line of pinned data into a search group of the CATB cache, wherein a constant number of non-pinned lines are maintained within the search group. As described above, Syed describes temporarily disabling a section of a cache, not inserting a line of **pinned data**. Additionally, Syed fails to describe inserting that line into a search group, wherein a constant number of non-pinned lines are maintained within the search group. The Office Action states that Syed describes a 4-way cache, one way which is temporarily disabled and three others are enabled – thus, “a constant number (i.e., three ways) of enabled cache area are maintained.” (Office Action dated 3/3/09, page 4). In doing so, the Office Action switches from treating the temporarily disabled way as the search group to treating the entire cache as the search group and three of the “ways” as the constant number of lines within the search group. It is respectfully submitted that the Office Action’s arguments are contradictory and that Syed (and thus the combination) is silent as to the details of search groups and lines of data. Furthermore, the disabled way in Syed is only **temporarily** disabled and is later enabled for normal use. Therefore, the Office Action’s treatment of ways as non-pinned lines would result in a number that is not constant. The treatment of the temporarily disabled way as the search group would fail to provide a constant number of non-pinned lines (in addition to the line of pinned data) as the way switches between being disabled and enabled.

Accordingly, applicant respectfully submits that the rejection of claim 1 has been overcome.

While independent claims 8, 10, 12, 13, 20 differ from claim 1, they contain features similar to those discussed above. Accordingly, applicant respectfully submits that the rejection of claims 8, 10, 12, 13, 20 has been overcome for at least the same reasons as above.

Given that claims 5 and 17 are dependent upon claims 1 and 13, and include additional features, applicant respectfully submits that the rejection of claims 5 and 17 has been overcome for at least the same reasons as above.

Claims 6 and 18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Syed in view of Rixner and further in view of the Background of the present application (hereinafter "Background").

Given that claims 6 and 18 are dependent upon claims 1 and 13, and include additional features, and that Background fails to remedy the shortcomings of Syed and Rixner discussed above, applicant respectfully submits that the rejection of claims 6 and 18 has been overcome for at least the same reasons as above.

Claims 2 and 14 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Syed in view of Rixner and further in view of Norman, U.S. Patent No. 6,292,868 (hereinafter "Norman").

Given that claims 2 and 14 are dependent upon claims 1 and 13, and include additional features, and that Norman fails to remedy the shortcomings of Syed and Rixner discussed above, applicant respectfully submits that the rejection of claims 2 and 14 has been overcome for at least the same reasons as above.

Claims 3, 4, 15 and 16 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Syed in view of Rixner and further in view of Norman and Wong U.S. Patent No. 7,130,979 (hereinafter "Wong").

Given that claims 3, 4, 15 and 16 are dependent upon claims 1 and 13, and include additional features, and that Norman and Wong fail to remedy the shortcomings of Syed and Rixner discussed above, applicant respectfully submits that the rejection of claims 3, 4, 15 and 16 has been overcome for at least the same reasons as above.

Claims 7 and 19 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Syed in view of Rixner and further in view of Background and Mandal et al, U.S. Patent No. 6,983,465 (hereinafter "Mandal").

Given that claims 7 and 19 are dependent upon claims 1 and 13, and include additional features, and that Background and Mandal fail to remedy the shortcomings of Syed and Rixner discussed above, applicant respectfully submits that the rejection of claims 7 and 19 has been overcome for at least the same reasons as above.

Claims 9, 11, and 21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Syed in view of Rixner and further in view of Wong.

Given that claims 9, 11, and 21 are dependent upon claims 8, 10, and 20, and include additional features, and that Wong fails to remedy the shortcomings of Syed and Rixner discussed above, applicant respectfully submits that the rejection of claims 9, 11, and 21 has been overcome for at least the same reasons as above.

CONCLUSION

Applicant respectfully submits that in view of the amendments and arguments set forth herein, the applicable objections and rejections have been overcome. Applicant reserves all rights under the doctrine of equivalents.

Pursuant to 37 C.F.R. 1.136(a)(3), applicant hereby requests and authorizes the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully Submitted,
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Date: March 25, 2009

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